

REMARKS

The application has been amended and is believed to be in condition for allowance.

There are no formal matters outstanding.

Claims 1, 2, 4, 5, 7-10, 13, 14, 16, 17, 19, 23 and 24 are rejected as anticipated by ROBERTSON 3,389,274.

Claims 1, 3, 4-6, 9-11, 14-16, 18 and 20-24 are rejected as anticipated by CULP 5,283,497.

Claims 12, 25 and 26 are rejected as obvious over ROBERTSON in view of BAUDENDISTEL 6,664,711.

No claims were indicated to be directed to allowable subject matter. The claims have been amended so as to patentably recite the present invention. The presently amended claim 1 corresponds to the originally filed claims 1, 2 and 8, with a further restriction to piezoelectric materials added. This restriction corresponds to the exemplifying embodiments shown in the description, see e.g., page 6, line 28. The presently amended claim 16 corresponds to the originally filed claims 16 and 17, with further restrictions added to correspond to the presently amended claim 1. The presently amended claim 25 corresponds to the originally filed claim 25, also with further restrictions added to correspond to the presently amended claim 1. All other claims are identical to originally filed ones, except for the restriction to piezoelectric material. Original claims 2, 8 and 17 are canceled. Dependency references are

adjusted where necessary. Amended claim 18 is furthermore corrected regarding the misprinted introduction part, which obviously refers to another category. All amended claims are therefore supported by the originally filed application.

The present invention, as recited by the amended claims, is novel and non-obvious for any one skilled in the art, for the reasons set out here below.

In ROBERTSON, a peristaltic actuator is disclosed, having a central rod, around which actuating ring-shaped members are provided. The actuating members are in some embodiments of magnetostrictive material and in some embodiments of piezoelectric material. Pulses are provided to excite selected parts of the actuating members, causing a peristaltic motion relative to the rod.

In CULP, an electrotiletable material is disclosed, that responsive to an activation electric signal, tilts surfaces to position objects such as rollers.

In the presently amended claim 1 of the present invention, all technical specifications of former claims 2 and 8 are included. It is noticed that the Official Action did not consider claim 8 to be anticipated by CULP. Therefore, amended claims 1, 16 and 25 are not anticipated by CULP.

In the presently amended claim 1 of the present invention, the actuating material is stated to be piezoelectric. Furthermore, the invention is characterized by causing the

interaction surface with the peristaltic section to be removed from the body simultaneously as the dimension change.

When considering the piezoelectric embodiments of ROBERTSON, the first feature is indeed fulfilled. However, the ROBERTSON invention makes use of a piezoelectric material that expands in the length direction and encircles the rod to interact with. With such a material and geometry, the peristaltic wave will be a pressure wave, i.e., where the length change is accompanied by a reduction in the diameter, essentially according to basic elastic properties. There are no piezoelectric materials that exhibit the property of simultaneously increasing both length and diameter. The piezoelectric arrangement of ROBERTSON will thus exhibit a larger force on the rod at the sections that are expanded, than outside these sections. The rod will therefore be "clamped" in these sections and the motion is therefore obstructed.

There are no suggestions, or even hints, about any such problems in ROBERTSON and therefore no motivation about the benefit for seeking solutions removing the contact in the peristaltic section. This is not very surprising, since there are no obvious solutions if not the general geometrical design having ring-shaped elements is abandoned.

As a conclusion, the invention, as defined by the amended independent claims is both novel and non-obvious.

Reconsideration and allowance of all the pending claims are respectfully requested.

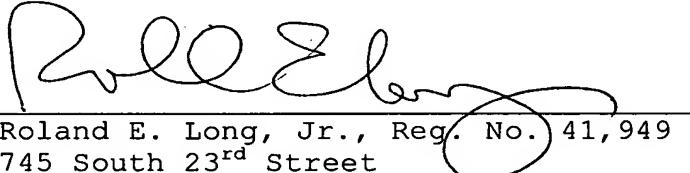
Should there be any further matter outstanding that requires resolution, it is requested that the undersigned attorney be contacted.

Applicant believes that the present application is in condition for allowance and an early indication of the same is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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